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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/594,213	01/19/2007	Carsten Hopf	296783US0PCT	7178

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EXAMINER	
GIBBS, TERRA C	

ART UNIT	PAPER NUMBER
1635	

NOTIFICATION DATE	DELIVERY MODE
07/16/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/594,213	HOPF ET AL.	
	Examiner	Art Unit	
	TERRA C. GIBBS	1635	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 April 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-17* is/are pending in the application.

4a) Of the above claim(s) *1-6 and 11-17* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *7-10* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *September 26, 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

This Office Action is a response to Applicant's Election filed April 11, 2008.

Claims 1-17 are pending in the instant application.

Election/Restrictions

Applicant's election without traverse of Group I, claims 7-10 in the reply filed on April 11, 2008 is acknowledged.

Claims 1-6 and 11-17 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on April 11, 2008.

The requirement is still deemed proper and is therefore made FINAL.

Accordingly, claims 7-10 have been examined on the merits.

Information Disclosure Statement

It is noted that Applicants have not filed an information disclosure statement under § 1.97(c). Applicant is reminded of 37 CFR § 1.56, which details Applicants duty to disclose all information known to be material to patentability.

Priority

Acknowledgment is made of applicant's claim for foreign priority. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Specification

The specification is objected to because the disclosure at page 46 line 16 contains embedded hyperlinks and/or other forms of browser-executable code that are impermissible and must be deleted. The attempt to incorporate subject matter into the patent application by reference to a hyperlink and/or other forms of browser-executable code is considered to be an improper incorporation by reference. See MPEP 608.01(p), paragraph I regarding incorporation by reference. Furthermore, if the application should issue and be placed on the Office web page, the URL may be interpreted as a valid HTML code and become a live web link, transferring a user to a commercial web site. Office policy does not permit the Office to link to any commercial site because the Office exercises no control over the organization, views or accuracy of the information contained on these outside sites. Appropriate correction is required.

It is noted that the instant specification at pages 47 and 48 lists numerous non-patent literature. If Applicants wish to have these references considered by the Office, Applicants should include them in an information disclosure statement filed under 37 CFR § 1.97.

Drawings

The drawings filed on September 26, 2006 are acknowledged and have been accepted by the Examiner.

Nucleotide Sequence Disclosures

This application contains sequence disclosures that are encompassed by the definitions for nucleotide and/or amino acid sequences set forth in 37 C.F.R. §1.821(a)(1) and (a)(2). However, this application fails to comply with the requirements of 37 C.F.R. §1.821-1.825 for the reason(s) set forth below: The disclosure contains sequences which fall under the purview of 37 CFR 1.821 through 1.825 as requiring SEQ ID NOs., but which are not so identified. For example, see Figures 3 and 4 and also see page 17, line 5 and page 43, lines 26 and 27. Applicant must fully comply with the sequence rules for any response to this action to be considered fully responsive.

Double Patenting

A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101 which states that "whoever invents or discovers any new and useful process ... may obtain a patent therefor ..." (Emphasis added). Thus, the term "same invention," in this context, means an invention drawn to identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the conflicting claims so they are no longer coextensive in scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.

Claims 7-10 of this application conflict with claims 7, 8, 13 and 14 of Application No. 11/630,076. 37 CFR 1.78(b) provides that when two or more applications filed by the same applicant contain conflicting claims, elimination of such claims from all but one application may be required in the absence of good and sufficient reason for their retention during pendency in more than one application. Applicant is required to either cancel the conflicting claims from all but one application or maintain a clear line of demarcation between the applications. See MPEP § 822.

This is a provisional double patenting rejection since the conflicting claims have not yet been patented.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 7-10 are provisionally rejected under 35 U.S.C. 101 as claiming the same invention as that of claims 7, 8, 13 and 14 of Application No. 11/630,076.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 7-10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 7-10 are indefinite because the term, "LAPTM4B" is not clearly defined. Since abbreviations often have more than one meaning, it is suggested that inserting the full name of the transmembrane protein would overcome the instant rejection.

Claims 7-10 are also indefinite because while the preamble of claim 7 recites, "a method for identifying a gamma-secretase and/or a beta secretase modulator", the methods steps conclude with "determining whether the LAPTM4B-interacting molecule of step a) is capable of modulating gamma-secretase and/or beta-secretase activity". There is not a clear nexus between the purpose of the claim as stated in the preamble and the last method step. Thus, it is unclear how the method steps accomplish the purpose of the claim as stated in the preamble.

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 7-10 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to

one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The claimed invention is directed to a method of identifying a gamma-secretase and/or a beta-secretase modulator comprising the step of a) identifying a LAPTM4B-interacting molecule by determining whether a given test compound is a LAPTM4B-interacting molecule, and b) determining whether the LAPTM4B-interacting molecule of step a) is capable of modulating gamma-secretase and/or beta-secretase activity. At issue for the purpose of written description is the lack of adequate written description for the genus of LAPTM4B molecules possessing the biological activity of interacting with one or more components of the gamma-secretase and/or beta-secretase complex, such that a molecule that binds to LAPTM4B is both an inhibitor of LAPTM4B activity and a modulator, e.g. agonist or antagonist, of gamma-secretase and/or beta-secretase activity that affects the ability of APP to be cleaved.

Vas-cath Inc. v. Mahurkar, 19USPQ2d 1111, clearly states that Applicant must convey with reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in possession of the invention. The invention is, for purposes of the 'written description' inquiry, whatever is now claimed." (See page 1117.) The specification should "clearly allow persons of ordinary skill in the art to recognize that (he or she) invented what is claimed." (See *Vas-cath* at page 1116).

The disclosure of a single species is rarely, if ever, sufficient to describe a broad genus, particularly when the specification fails to describe the features of that genus, even in passing. (see *In re Shokal* 113USPQ283(CCPA1957); *Purdue Pharma L.P. vs Faulding Inc.* 56 USPQ2nd 1481 (CAFC 2000).

To provide adequate written description and evidence of possession of a claimed genus, the specification must provide sufficient distinguishing identifying characteristics of the genus. The factors to be considered include disclosure of compete or partial structure, physical and/or chemical properties, functional characteristics, structure/function correlation, methods of making the claimed product, or any combination thereof.

In analyzing whether the written description requirement is met for genus claims, it is first determined whether a representative number of species have been described by their complete structure. Lysosomal associated transmembrane protein 4-beta (LAPTM4B) has been known in the art to be upregulated in hepatocellular carcinoma as disclosed in the instant specification (page 3, lines 30-34). However, Applicant appears to have discovered a novel biological activity of LAPTM4B using a LAPTM4B protein as shown in Figure 3. However, the specification discloses that the term "LAPTM4B" does not only mean the protein as shown in SEQ ID NO:3, but also a functionally active derivative thereof, or a functionally active fragment thereof, or a homologue thereof, or a variant encoded by a nucleic acid that hybridizes to the nucleic acid encoding SEQ ID NO:3 (see page 4, lines 20-24), and the specification does not disclose the portion(s) of wildtype LAPTM4B (SEQ ID NO:3) that are responsible for manifesting the interaction between LAPTM4B and members of the gamma-secretase and/or beta-secretase complex so as to affect gamma-secretase and/or beta-secretase activity upon the cleavage of APP as postulated. Thus, the method embraces the use of an enormous genus of structurally undisclosed variants of LAPTM4B/LAPTM4B-like polypeptides that not necessarily possess the newly disclosed biological activity of interacting with one or more members of the gamma-secretase and/or beta-secretase complex.

The Revised Interim Guidelines state:

> "The claimed invention as a whole may not be adequately described if the claims require an essential or critical element which is not adequately described in the specification and which is not conventional in the art" (col. 3, page 71434), "when there is substantial variation within the genus, one must describe a sufficient variety of species to reflect the variation within the genus", "in an unpredictable art, adequate written description of a

> genus which embraces widely variant species cannot be achieved by disclosing only one species within the genus" (col. 2, page 71436).
>
> An Applicant shows possession of the claimed invention by describing the claimed invention with all of its limitations using such descriptive means as words, structures, figures, diagrams, and formulas that fully set forth the claimed invention. *Lockwood v. American Airlines, Inc.*, 107 F.3d 1565, 1572, 41 USPQ2d 1961, 1966 (Fed. Cir. 1997).
>
> Possession may also be shown in a variety of ways including description of an actual reduction to practice, or by showing that the invention was "ready for patenting" such as by the disclosure of drawings or structural chemical formulas that show that the invention was complete, or by describing distinguishing identifying characteristics sufficient to show that the Applicant was in possession of the claimed invention. See, e.g., *Pfaff v. Wells Elecs., Inc.*, 525 U.S. 55, 68, 1 19 S.Ct. 304, 312, 48 USPQ2d 1641, 1647 (1998), *Regents of the University of California v. Eli Lilly*, 119 F.3d 1559, 1568, 43 USPQ2d 1398, 1406 (Fed. Cir. 1997)*, Amgen, Inc. v. Chugai Pharmaceutical*, 927 F.2d 1200, 1206, 18 USPQ2d 1016, 1021 (Fed. Cir. 1991) (one must define a compound by "whatever characteristics sufficiently distinguish it").

Therefore, conception is not achieved until reduction to practice has occurred, regardless of the complexity or simplicity of the method of isolation. See *Fiers v. Revel*, 25 USPQ2d 1602 at 1606 (CAFC 1993) and *Amgen Inc. v. Chugai Pharmaceutical Co. Ltd.*, 18 USPQ2d 1016. One cannot describe what one has not conceived. See *Fiddes v. Baird*, 30 USPQ2d 1481, 1483. *In Fiddes*, claims directed to mammalian FGF's were found to be unpatentable due to lack of written description for that broad class. The specification provided only the bovine sequence.

Without a correlation between structure and function, the claim does little more than define the claimed invention by function. That is not sufficient to satisfy the written description requirement. *See Eli Lilly*, 119 F.3d at 1568, 43 USPQ2d at 1406 ("definition

by function ... does not suffice to define the genus because it is only an indication of what the gene does, rather than what it is").

Applicant has not provided any description or reduction to practice of a method for identifying a gamma-secretase and/or beta-secretase modulator comprising the step of identifying a LAPTM4B-interacting molecule by determining whether the given test compound binds to LAPTM4B and modulates gamma-secretase and/or beta-secretase activity to cleave APP. Based on the Applicant's specification, the skilled artisan cannot envision the detailed chemical structure of the enormous genus of LAPTM4B and variants thereof that are capable of enhancing or suppressing the activity of gamma-secretase and/or beta-secretase to cleave APP when bound to a structurally undisclosed compound that binds to and inhibit at least one LAPTM4B activity, as encompassed by the claims.

The inventive concept is Applicant's apparent discovery of an interaction between LAPTM4B and members of the gamma-secretase and/or beta-secretase complex. Thus, the artisan is dependent upon Applicant's disclosure to reveal that part of LAPTM4B activity responsible for modulating gamma-secretase and/or beta-secretase activity, as measured by APP cleavage, for example.

Accordingly, given that the specification does not teach what is the complete structure of a single species of the exceptionally broadly-defined LAPTM4B genus, this limited information is not deemed sufficient to reasonably convey to one skilled in the art that the Applicant is in possession of the required starting materials, that is functional

variants or derivatives of LAPTM4B, to perform the necessary active steps and effect the claimed method, at the time the application was filed.

Thus, for the reasons outlined above, it is concluded that the claims do not meet the requirements for written description under 35 U.S.C. 112, first paragraph. Applicant is reminded that *Vas-Cath* makes clear that the written description provision of 35 U.S.C. §112 is severable from its enablement provision (see page 1115).

Conclusion

No claims are allowable.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Terra C. Gibbs whose telephone number is 571-272-0758. The examiner can normally be reached on 9 am - 5 pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James "Doug" Schultz can be reached on 571-272-0763. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on

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July 10, 2008
/Terra Cotta Gibbs/

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	10/594,213	HOPF ET AL.	
	Examiner	Art Unit	
	TERRA C. GIBBS	1635	